Hot Finished Hollow Sections
Impact Test & Tolerances

Impact Test

Standard impact specimens are cut longitudinally from the sections and machined on each face to 10mm x 10 mm in cross section and a V notch, 2 mm deep, is cut into one face. The specimen is then tested at the appropriate temperature in accordance with BS 131 : Part 2, The Charpy VNotch Impact Test. Due to the machining, standard specimens can only be taken from material 11 mm thick, or thicker. For thinner material, tests are made on the next subsidiary standard test piece with average values in accordance with BS 5950.

Average value for standard test piece	Equivalent average value for subsidiary standard test piece	
10mm x 10mm	10mm x 7.5mm	10mm x 5.0mm
J	J	J
27	27	19

Unless agreed otherwise, impact tests are not carried out on Grade 43C material or where the section is less than 6 mm thick.

Dimensional Tolerances (in accordance with EN 10210)

Characteristic	Circular hollow sections	Square and rectangular hollow sections	Elliptical hollow sections
Outside dimensions (D, B, H)	±1 % with a minimum of ± 0,5 mm and a maximum of ± 10 mm	± 1 % [a] with a minimum of ± 0,5 mm	
Thickness (T)	-10 % [b,c]		
Out-of-roundness (O)	2 % for hollow sections having a diameter to thickness ratio not exceeding 100 [d]	—	
Concavity/Convexity (x_1, x_2) [e]	—	1 %	—
Squareness of side (θ)	—	90° ± 1°	—
External corner profile (C_1, C_2 or R) [f]	—	3T maximum at each corner	—
Twist (V)	—	2 mm [a] plus 0,5 mm/m length [a]	
Straightness (e)	0,2 [a] % of total length and 3 mm over any 1 m length		
Mass (M)	± 6 % on individual delivered lengths [g]		

a For elliptical hollow sections of sizes H < 250 mm the permitted tolerance is twice the value given in this table.
b The positive deviation is limited by the tolerance on mass.
c For seamless sections thicknesses of less than 10 % but not less than 12,5 % of the nominal thickness may occur in smooth transition areas over not more than 25 % of the circumference.
d Where the diameter to thickness ratio exceeds 100, the tolerance on out-of-roundness shall be agreed.
e The tolerance on convexity and concavity is independent of the tolerance on outside dimensions.
f The sides need not be tangential to the corner arcs.
g The positive tolerance on the mass of seamless hollow sections is 8 %.

Mass Tolerance

The rolling tolerance in accordance with EN 10210, Part 2 is +6% on individual lengths; +6% - 4% on lots of 10 tonnes and over.

Straightness Tolerance

Unless otherwise arranged, the hollow section shall not deviate from staightness by more than 0.2% of the total length as produced, measured at the centre of the length.

Length Tolerance

Mill and Random lengths are supplied as in the following tables. Exacts may be supplied at our option, with a tolerance of +6mm - 0. Lengths above 12 m in length are subject to an extra for transportion.

RSA Regency Steel Asia
61 Alexandra Terrace, #08-01/02, Harbour Link Complex, Singapore 119936
Tel: (65) 6221 0018 • Fax: (65) 6224 6771
Yard (PIW): PLO 796 (PTD 222164), Jln Nikel 3, Zon 12C, Kaw. Perindustrian Pasir Gudang, 81700 Johor Bahru
sales@regencysteelasia.com.sg • www.regencysteelasia.com